

LAKE MANAGEMENT PLAN

Updated June 2011 – Bill Baker

Water: Kings Lake (Pend Oreille County)

Location: Kings Lake is located 6.5 miles northeast of Usk, WA.

	Size:	Max. Depth:	Volume:
Kings Lake	65 acres	55 ft	1950 acre feet

Water Source: Two major tributaries (unnamed), both less than 0.25 miles in length and both originating from springs. One minor (intermittent) tributary and some groundwater seeps.

Outflow: Seasonal drainage southwesterly to Skookum Creek and the Pend Oreille River. However, this drainage only occurs during spring of years with extremely high water (high winter/spring precipitation). In most years there is no outflow, even in spring.

Management History: Kings Lake (Pend Oreille County, Washington) was rehabilitated with rotenone in fall of 1940. It was the first rehabilitation project in Washington State (Don Earnest, Washington Department of Game, personal communication to Bert Bowler of Idaho Cooperative Fishery Unit, 1970). In 1941, adfluvial cutthroat captured from Granite Creek, Washington and Kalispell Creek, Idaho (tributaries to Priest Lake, Idaho), were spawned, and offspring were reared at the Pend Oreille Hatchery (Usk Hatchery). These fish were stocked into Kings Lake in spring 1941. This was the origin of Kings Lake stock westslope cutthroat. The first egg-take from Kings Lake occurred in spring 1943, resulting in a collection of 1.3 million eggs (Crawford 1979).

In the early 2000's, Kings Lake stock cutthroat were accidentally mixed with Phalon stock rainbow trout in the hatchery, and these fish were subsequently stocked into Kings Lake. Despite maintaining adult traps on two main tributaries of Kings Lake, both cutthroat and rainbow trout have been successful at reproducing naturally in the system. Due to overlap in spawn-timing and a lack of reproductive isolating mechanisms between the two species, genetic introgression has occurred, resulting in corruption of the formerly genetically pure westslope cutthroat population. In addition, it appears that an annually increasing amount of biomass is being tied up in rainbow trout and/or introgressed individuals. Visual inspections of all fish captured during adult trapping in the two main tributaries (conducted during the spring spawning season) allow WDFW staff to "pick out" individuals with phenotypic characteristics of rainbow trout. However, despite having done this for multiple years, the rate of genetic introgression has increased over time.

Idaho Department of Fish and Game (IDFG) requested Kings Lake stock cutthroat in 2007 to start their own westslope cutthroat brood at Cabinet Gorge Hatchery. From 2007 through 2010, IDFG collected and spawned 30 pairs of fish from Kings Lake per year. They conducted genetic testing (using 6-7 of Ostberg's nDNA markers) of each parent fish to determine whether rainbow trout alleles were present. All offspring resulting from crosses of parent fish with evidence of rainbow trout alleles were culled from the broodstock population.

Kings Lake stock cutthroat (n = 10,000) from Cabinet Gorge Hatchery will be obtained from IDFG for brood replacement into Kings Lake beginning in spring 2011 and continuing through spring 2014.

T&E Flora and Fauna: No known report exists of any threatened or endangered species habitually found in or near this lake. Protected species of waterfowl and other birds frequently are found here at times.

Current Management Objectives: Kings Lake (Pend Oreille County) is maintained as a brood lake for westslope cutthroat (Kings Lake stock), which are used to supply Region 1 needs for lowland lake trout fisheries. The current annual egg-take goal for Kings Lake is 325,000. Replacement cohorts of Kings Lake cutthroat are reared at Ford Hatchery to 1.2 fish per pound (fpp) and are stocked into the lake annually (fall) at a rate of 1700 fish/year to maintain desired population characteristics.

1. Fishery objectives: N/A. Kings Lake is a westslope cutthroat brood lake which is closed to fishing.

2. Angler use objectives: N/A.

3. Stocking Objectives:

<u>Year</u>	<u>Species</u>	Number of Fish Stocked			Planting Month
		Total	/Acre	/Pound	
1	Cutthhroat	7,500	134	20.0	May
2	Cutthhroat	7,500 2,500	134 45	20.0 1.2	May September
3	Cutthhroat	7,500 2,500	134 45	20.0 1.2	May September
4	Cutthhroat	7,500 2,500	134 45	20.0 1.2	May September
5	Cutthhroat	7,500 2,500	134 45	20.0 1.2	May September

Management Strategy:

- Plant cutthroat trout spring 2012 (spring fry) and during successive springs through 2016.
- Plant cutthroat trout fall 2013 (2-year old) and during successive falls into future.
- Egg take goal of 325,000 by spring 2016.